FIG 7 is a side elevational view, partially in cross section of the probe tip of the first embodiment in its extended position when engaged with the drogue;

FIG 8 is a side perspective view of a second embodiment of the invention;

FIG 8A is a top plan view of the second embodiment;

FIG 8B is a top perspective view of the refueling receptacle and VisNav sensor of the embodiment of FIG 8.

FIG 9 is a side elevational view of a third embodiment of the invention;

FIG 9A is a top plan view of the refueling aircraft of the third embodiment;

FIG 9B is a top perspective view of the refuel receptacle of the third embodiment;

FIG 10 is a side elevational view of a fourth embodiment of the invention having a mechanism for deploying the boom from the refueling aircraft;

FIG 11 is a side elevational view drawing of the fourth embodiment showing the boom partially deployed from the refueling aircraft;

FIG 11A is a schematic drawing illustrating the cable/reel assembly of the fourth embodiment;

FIG 12 is a schematic drawing of the fourth embodiment showing the boom fully deployed from the refueling aircraft;

FIG [[13]] 13a is a side elevational view of the fourth embodiment of the invention, with the probe extended;

FIG [[13A]] 13b is a side elevational view of the fourth embodiment of the invention, with the probe retracted;

FIG 14 is a side elevational view showing the fourth embodiment with its refueling probe connected to the drogue of the refueling aircraft; and

Referring no to FIGS 10-14, a further embodiment of the invention which employs a unique triangular shaped hinged boom/receptacle deployed from the refueling aircraft is illustrated. This is a unique low speed lightweight boom and Paradrogue ("docking captive device") system capable of operating from zero air speed with hovering vehicles up to and in excess of 200 knots. The fly catcher Paradrogue 18 of this embodiment is similar to that of the previous embodiments except that it is rigid. Further, unlike conventional systems, the boom remains stationary while the aircraft on which the probe is mounted flies the probe into the boom.

The boom 11 is shown in its stowed position in FIG 10. The inner end of the boom is connected to the body of the refueling aircraft by means of a universal coupling joint 34 and its outer end retained to the aircraft body in receptacle 35. In FIG 11, the boom is shown partially extended from receptacle 35 on cable 36 which extends from a tensioned reel 37 mounted within the receptacle as shown in Fig 11A. The boom is shown fully extended in FIG 12.

The coupling joint 34 permits compliance of the cable/reel mechanism so that lateral movement caused by forces between the air vehicle boom tip and the receptacle is absorbed by the slider joint and the tensioned reel mechanism to take up slack in the cable with low force. The compliant hinge coupled with the triangular boom take up mechanism allows small interaction forces and yet restrains relative motion during refueling.

FIG 14 shows the refueling aircraft 20 connected to the aircraft being refueled 21 while FIGS [[13]] 13a and [[13B]] 13b show the refueling probe 13 of the vehicle to be refueled in its extended and retracted positions respectively. The receptacle 39 on the